INTERNATIONAL STANDARD

ISO 6363-4

First edition
1991-10-15

Wrought aluminium and aluminium alloy cold-drawn rods/bars and tubes —

Part 4:
Drawn rectangular bars — Tolerances on form and dimensions

Barres et tubes étirés à froid en aluminium et alliages d'aluminium corroyés —

Partie 4: Barres rectangulaires étirées — Tolérances sur forme et dimensions

Reference number
ISO 6363-4:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6363-4 was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Sub-Committee SC 6, *Wrought aluminium and aluminium alloys*.

ISO 6363 consists of the following parts, under the general title *Wrought aluminium and aluminium alloy cold-drawn rods/bars and tubes*:

— *Part 1: Technical conditions for inspection and delivery*

— *Part 2: Mechanical properties*

— *Part 4: Drawn rectangular bars — Tolerances on form and dimensions*

— *Part 5: Drawn rectangular polygonal bars — Tolerances on form and dimensions*

— *Part 6: Drawn round tubes — Tolerances on form and dimensions*

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Wrought aluminium and aluminium alloy cold-drawn rods/bars and tubes —

Part 4:
Drawn rectangular bars — Tolerances on form and dimensions

1 Scope

This part of ISO 6363 specifies the tolerances on form and dimensions of wrought aluminium and aluminium alloy drawn rectangular bars with thicknesses ranging from 2 mm up to and including 40 mm and widths up to and including 200 mm.

The ratio of the largest section to the smallest one is up to and including 10 (see ISO 3134-3).

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 6363. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 6363 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3134-3:1985, *Light metals and their alloys — Terms and definitions — Part 3: Wrought products.*

3 Tolerances on form and dimensions

3.1 Tolerances on width and thickness

The tolerances on width and thickness shall be in accordance with table 1.

The dimensions shall be measured so that they are not influenced by the corner radii.

Table 1 — Tolerances on width and thickness

Values in millimetres

Width, b [1]		Thickness a tolerances for thickness ranges[1]				
	Tolerances	$2 \leqslant a \leqslant 6$	$6 < a \leqslant 10$	$10 < a \leqslant 18$	$18 < a \leqslant 30$	$30 < a \leqslant 40$
$b \leqslant 10$	± 0,08	± 0,06	± 0,08	—	—	—
$10 < b \leqslant 18$	± 0,10	± 0,06	± 0,08	± 0,10	—	—
$18 < b \leqslant 30$	± 0,15	± 0,06	± 0,08	± 0,10	± 0,15	—
$30 < b \leqslant 50$	± 0,20	± 0,08	± 0,10	± 0,12	± 0,15	± 0,20
$50 < b \leqslant 80$	± 0,25	± 0,10	± 0,10	± 0,12	± 0,15	± 0,20
$80 < b \leqslant 120$	± 0,28	—	± 0,12	± 0,15	± 0,20	± 0,25
$120 < b \leqslant 160$	± 0,32	—	—	± 0,15	± 0,20	± 0,30
$160 < b \leqslant 200$	± 0,35	—	—	± 0,20	± 0,25	± 0,35

1) If $b/a > 10$, the permissible tolerances shall be agreed upon.

3.2 Fixed-length tolerances

If fixed-length bars are ordered, their maximum permissible length tolerances shall be in accordance with table 2.

Table 2 — Fixed-length tolerances

Values in millimetres

Width, b	Tolerances on fixed lengths				
	up to and including 250	over 250 up to and including 1 000	over 1 000 up to and including 2 000	over 2 000 up to and including 5 000	over 5 000
$b \leqslant 30$	$^{+1}_{0}$	$^{+2}_{0}$	$^{+3}_{0}$	$^{+5}_{0}$	By agreement
$30 < b \leqslant 50$	$^{+2}_{0}$	$^{+3}_{0}$	$^{+4}_{0}$	$^{+6}_{0}$	
$50 < b \leqslant 120$	$^{+2,5}_{0}$	$^{+4}_{0}$	$^{+5}_{0}$	$^{+7}_{0}$	
$120 < b \leqslant 200$	$^{+3}_{0}$	$^{+5}_{0}$	$^{+6}_{0}$	$^{+8}_{0}$	

The squareness of a cut shall be within the fixed-length tolerance.

3.3 Corner radii

The corners of the bars shall be slightly rounded, but the corner radii shall not exceed the values specified in table 3.

Table 3 — Maximum corner radii

Dimensions in millimetres

Thickness, a	Maximum corner radii
$a \leqslant 10$	0,4
$10 < a \leqslant 40$	0,8
$40 < a$	1,2

3.4 Form tolerances

The maximum form tolerances specified in 3.4.1 to 3.4.3 apply to all tempers, except the O tempers.

Form tolerances are measured by placing the bar on a horizontal plate under its own weight as shown in figures 1 to 3.

3.4.1 Flatness tolerances

The maximum allowable flatness tolerances, e, shall be in accordance with table 4. The deviation from flatness e_i shall be measured in accordance with figure 1.

Table 4 — Flatness tolerances

Values in millimetres

Width, b	Flatness tolerance e
$b \leqslant 30$	0,2
$30 < b \leqslant 50$	0,3
$50 < b \leqslant 80$	0,4
$80 < b \leqslant 120$	0,6
$120 < b \leqslant 200$	0,9

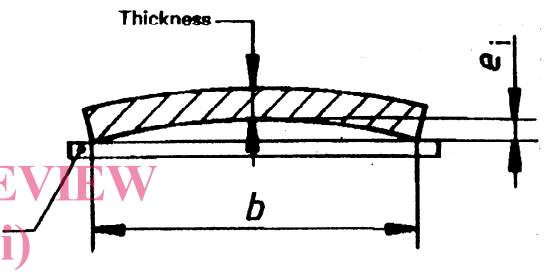

Figure 1 — Measurement of deviation from flatness

3.4.2 Straightness tolerances

The maximum allowable straightness tolerance, h, for the total length l shall be 2 mm per 1 000 mm of length (see figure 2). In addition, h_2 shall not exceed 0,6 mm for each section of 300 mm length (l_2).

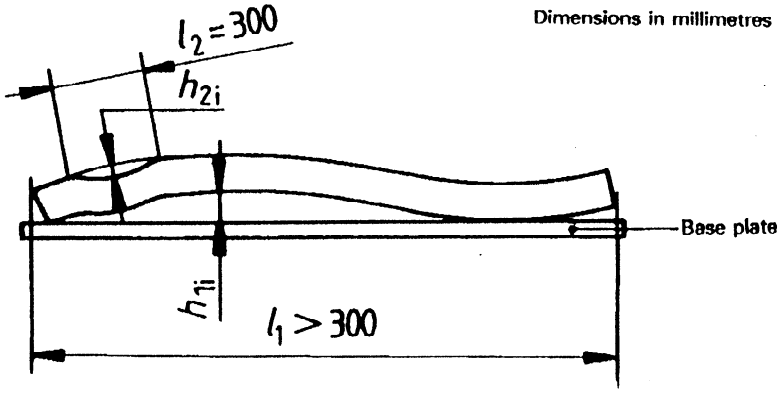

Figure 2 — Measurement of deviation from straightness

3.4.3 Twist tolerance

The maximum allowable twist tolerances shall be in accordance with table 5.

The twist v_i shall be measured as shown in figure 3.

Table 5 — Twist tolerances

Values in millimetres

Width, b	Twist tolerance, v		
	per 1 000 mm of length	over the total length	
		up to and including 5 000	over 5 000
$b \leqslant 30$	1,5	3	By agreement
$30 < b \leqslant 50$	2	5	
$50 < b \leqslant 120$	3	7	
$120 < b \leqslant 200$	4	10	

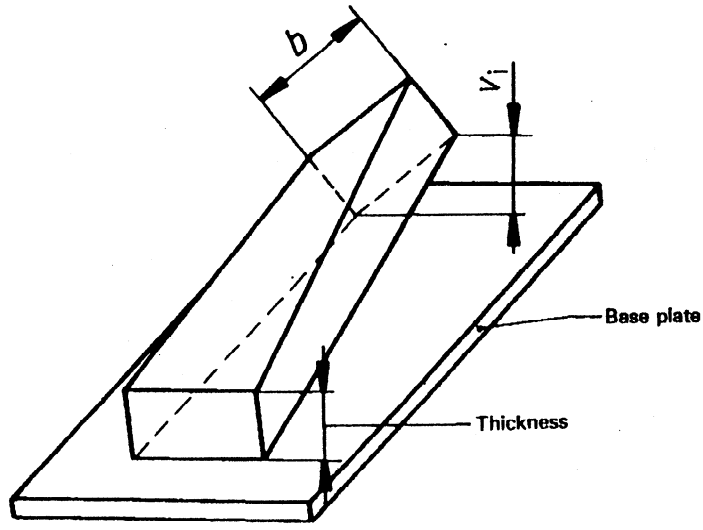

Figure 3 — Measurement of twist

This page intentionally left blank

UDC 669.71-124.2-422:621.753.1

Descriptors: wrought products, aluminium products, metal bars, dimensions, dimensional tolerances, form tolerances.

Price based on 4 pages